Size Matters!

Session Outline

Three things to remember

Basic HTML you must know

File format overview

JPEGs — soft vs. sharp

Advanced tips

- Locking colors
- Lossy GIF
- Transparency
- Removing halos > Defringe and Matte color
- Optimize to file size
- Weighted optimization — using alpha channels

Automating the process

- Creating Droplets
- Customizing Droplets by adding History States

Online Resources

- http://www.adobe.com/studio/tipstechniques/photoshop.html
- http://www.adobe.com/expertcenter/photoshop/login.html

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Your Audience. . .

Three things to remember about your audience:

1. Average modem speed is 28.8 kbs. This means that 1K of information will take about 1 second of transmission time. A good marker to remember is to keep the total page weight in terms of file size somewhere between 30–60 K. That means all text and graphics of the page. Entry pages (a welcome page that comes before a home page, maybe should be even lighter so that something happens immediately after someone enters in your URL.) Remember, it's not about creating a page, it's about creating an experience. If the experience is slow, you have potentially lost your audience.

2. Average monitor size is 800 x 600 pixels. The actual viewing size of the default Netscape browser window stretched to fill the monitor then is about 750 x 425 pixels. You should remember that most people either don't want to, or just simply will not scroll — at least, not horizontally.

   As an aside, many of you come from a print media background and you are used to thinking in points and picas instead of inches or pixels. There are 72 points in an inch. When you are comping out your Web pages, change your monitor resolution setting to 640 x 480. At this setting, there are 72 pixels in an inch. So, when you are in your favorite graphics program, a point is the same thing as a pixel and you can use a measurement system that you are familiar with to sketch things out at actual size.

3. Most monitors are at least 16 bit, capable of displaying ~16,000 colors. However, there are still a significant number of older machines out there that have 8 bit monitors (256 colors), a 640 x 480 screen and slower connection speeds.

   A monitor that can only display 256 colors means that images that have more than 256 colors in them will dither on screen. Dithering is not always a bad thing! You want your photographic images to dither, you do not want your solid color images (like line art, logos, icons, buttons, etc.) to dither.

Possible Issues

Modem:

28.8 - 33.6

Monitor Resolutions:

640 x 480
(actual = 590 x 325)

800 x 600
(actual = 750 x 425)

WebTV
545 x 380

Colors:

256 (8 bit)

The bottom line — know your audience. With the internet-enabled devises becoming pervasive, designers will only have more techincal parameters to consider, not less.

The Browser

Don't rely just on graphics

People just starting off in Web design often ask me why Web developers include a text based way to navigate through a site in addition to the graphical links and buttons they have on the page. There are several reasons to do this. A large portion of your audience has learned about the feature in a browser that allows you to turn graphics off as they surf. When there is a graphic inserted in a page that they may want to take a look at, they simply click on it. Then and only then does it download. This makes for much faster surfing. For one reason or another, it is also possible that the graphics may not be found by the server, in which case you would see generic missing picture icons instead. Providing a text based way to navigate means that the user can get around regardless of whether they see graphics or not.

Speed Tip:

Every image should have Width, Height and Alt attributes assigned in the <IMG> tags.

Always use Width, Height and Alt attributes!

See the following page for descriptions about these attributes of the <IMG> tag used to insert a graphic into an HTML page. The Width and Height attributes make for more efficient downloading of a page. When a browser comes across an image in a Web page, it looks to see how big it is to know how much space it needs to allocate for the image to be displayed. If there are no size attributes, it has to figure out how big the graphic is on its own — before it does anything else! You want the text of your page to show up immediately, followed by the graphics. By including the size attributes, the browser reserves space for the graphic, displays the text, and then when the text is finished, fills in the spaces with the graphics.

Speed Tip:

Use graphics repeatedly to take advantage of the browser's cache.

The size attributes will also preserve the layout integrity if the user has turned the Auto Load Graphics feature off in the browser. You won't see the graphic, but you will still see the rectangle showing you how much space the graphic takes up. In addition then, you should include the Alt attribute as well in your image tags. The Alt attribute allows you to include a description about the graphic that will display inside the rectangle picture box so that your viewer still sees information about the graphic if they have chosen not to download the graphics.

Cache those graphics

When you enter a URL into a location field in a browser, the browser essentially makes a phone call that connects to the server where the page you requested is located. Once the connection is made, the server sends all of the elements on the page to your hardrive. After the elements are copied to your hardrive, the browser displays them to you. All of this to tell you that this is a great thing because if you use a previously viewed graphic again on a different page, or even on the same page, the browser says to itself, "hey wait a minute, I've already seen this graphic. As a matter of fact, I've already copied this to your hardrive. I don't need to download this from the server again, I can just show you the copy I've already got." This is what they mean when all those people tell you smugly, "Oh yeah, your graphic has been cached"

HTML Basics

First of all, HTML is not rocket science. It stands for HyperText Markup Language. Sure, it can be a little disorientating at first to see lines and lines of text and code staring at you, but you'll get used to it soon enough. An HTML document is nothing more than a simple text file. The beauty of that fact is that any computer, regardless of its operating system, will understand it. Thus, we have a truly universal way to create Web pages that anyone can view with a browser. When you are first learning this new language, it is more important to focus on learning the structure of HTML, rather then worrying about which specific tag does what. The more you expose yourself to HTML code, the easier it will be to remember specific tags and what they do.

HTML Tags

All HTML tags, or commands, are enclosed in brackets, or the greater than (<) and less than (>) symbols. Most, but not all, tags come in pairs—an opening tag, and a closing tag. The closing tag also includes the forward slash (/) symbol—it is this slash that actually stops or turns the HTML command off for the particular tag you are using.

Attributes and Values

Some tags can have certain options, called attributes, applied to them. Attributes and their corresponding values always are included in an opening tag, but are not necessary in the closing tag. Some attributes are just single words naming the attribute, but most attributes are followed by an equal (=) sign, with the value or setting for the attribute defined right after that.

Carriage Returns and Quote Marks

In HTML, carriage returns are ignored. If you want to start a new paragraph in an HTML document, you must use the <P> tag. This is one of those tags which doesn't need to have a closing tag, although it is not wrong to include </P> at the end of a paragraph if you want to. Quote marks MUST be the straight ones! After years of hearing that the quote and apostrophe key on your keyboards weren't actually the correct "curly" quotes, you now have use these straight quotes. If you are using a word processor or some other type of program which has a smart quotes option turned on, you must turn it off. Otherwise, any tag that requires quotes will not work properly.

<B>Walking in Memphis</B>

Bracket | Opening Tag | Actual text | Forward slash of the closing tag

Tag Structure

Opening tag, enclosed in brackets (in this example, B is the name of the Bold tag). Then the actual text. Notice, there is no space between the tag and the actual text you are applying the code to. Last, the closing tag, including a forward slash.

<BODY BGCOLOR="#FFFFFF">

Bracket | Tag | Space | Attribute | Equal sign | Value

Attribute & Value Structure

Opening bracket, then the tag, followed by a space, then the name of the attribute, followed by an equal sign with no space, then the value of the attribute with no space, with a closing bracket at the end. Spaces are only used if you want to use more than one attribute in a tag—in which case, you would put a space after a value, then enter the next attribute you want to use.

Know the Code: Inserting Graphics with the <IMG> tag

The <IMG> tag is used to insert graphics into a web page, as long as the graphics themselves are saved in an appropriate file format.

```
<IMG  WIDTH=200  HEIGHT=200  SRC="images/poster.gif"  ALIGN=LEFT  ALT="This
is a poster, 30k"  HSPACE=10  VSPACE=10 LOWSRC="posterlo.jpg">
```

<IMG	This is the actual name of the tag. The rest of what you see within its brackets up above are attributes and their values for this tag.
WIDTH/HEIGHT	Two very important attributes! Using these attributes tells the browser exactly how large the graphic is up front, which means the browser will reserve the space for the graphic, and load the text on the page first. Once the text is viewed, the browser will fill in the graphic. If the width and height attributes are not included, the browser has to figure out how big the graphic is, will load the graphic first, and the viewer will have to wait until the graphic comes in before any text will appear. The unit of measure is always in pixels.
SRC	This is the attribute that actually references the graphic's path name to wherever you've chosen to store the graphic on the web server. It is always easiest to store the graphics in the same folder or directory as the HTML page that is referencing it. However, if this becomes unmanageable, you can create separate directories or folders for just the graphics. You must include that directory in the path name. In the above example, the *poster.gif* is located in a directory named *images*, which is in the same directory that the HTML document is located, so the complete path name is *images/poster.gif*.
ALIGN	The value of this can be Left or Right. This positions the graphic to the left or right of the browser window. It also determines if text will wrap around the graphic. Without this attribute, text will not wrap around the image.
ALT	This attribute allows you to include an alternate text image that your viewers will see if they are using a text only browser, if they have turned off the feature to view graphics, or if for some reason, the browser can no longer find the image on the server to download.
HSPACE/VSPACE	This attribute allows you to include extra space either horizontally or vertically around the image. The space is put on both sides of the graphic respective to which attribute you use.
BORDER	If you have made a graphic into a button or link, the browser will add a border to the image and use the color specified by the LINK attribute of the BODY tag. If you want to remove the border, use 0 (zero) as its value.
LOWSRC	You can use this attribute to have a low resolution image display right away, along with the text of the page. After all the text is displayed, the browser will replace the low resolution image with the higher resolution image. The result is that the viewer perceives faster downloads because of the quicker feedback.

File Formats

You currently have two file formats to choose from when it comes to saving an image as a Web graphic, Gif or JPEG. Soon, we will have another file format to choose from called PNG (pronounced "ping"). The table below discusses the differences between the three.

JPEG	· Usually first choice for photographic images · Supports 24 bit color (16.8 million colors) · Does not support transparency or animation · Uses "lossy" compression
GIF	· Use it for images with solid colors like line art, logos, text, icons, etc. or for photographic images that you want to animate or have on a transparent background · Maximum color is 8 bit (256 colors) · Must be indexed to a color palette (Adaptive or Web) · Supports one-bit transparency · Can be interlaced (so they download progressively) · Can be animated
PNG	· Not supported inline by browsers yet (you need a plug-in) · Supports 24 bit color (16.8 million colors) · Supports true 8 bit transparency via an alpha channel · Uses "non-lossy" compression that is up to 30% smaller than Gif · Current spec does not support animation

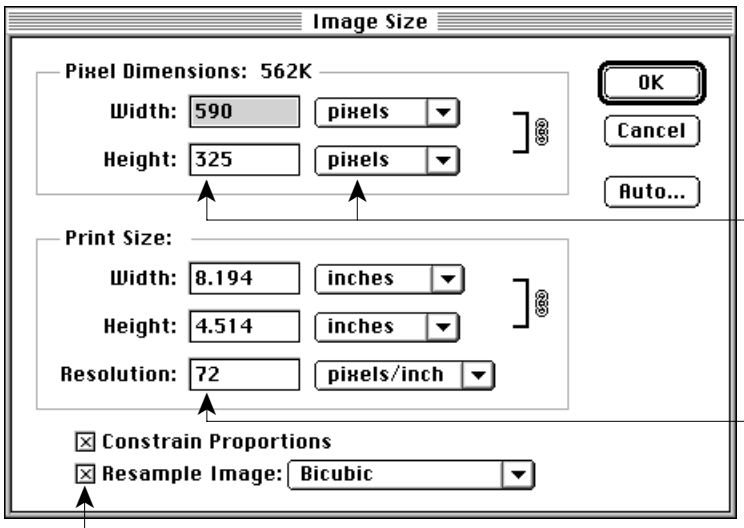
Repurposing Existing Print Graphics for the Web

Graphics that will be printed have different parameters to deal with than graphics that will end up being displayed in a Web browser. First and foremost is the resolution issue. Web graphics never need to be more than 72 dpi. Here is the typical workflow to convert a print based graphic into a Web graphic.

1. **View the image at the 100% (or 1:1) view.** To do this, double click on the Magnifying Glass tool in the Tools palette. This will put you in the 100% view. You can now see how big the graphic would appear in a Web browser. Is it too big, too small? If you want to use the entire image at a different scale then you must downsample the image to 72 dpi.

2. **Downsample the image.** Go to Image: Image Size. Make sure that the Resample checkbox is turned on. Leave the Resolution setting alone and just change the pixel dimensions to whatever size you want it the image to be.

3. **Sharpen the image.** What most people forget is what happens to an image after you have downsampled (make it smaller) it. Most people realize what happens when you make an image larger — it tends to soften the image. When you resample an image larger, you are asking Photoshop to create new pixels for you that don't exist. That is called "interpolation". In other words, Photoshop is guessing what the pixels would be if they were actually there. Well, when you downsample an image, you are telling Photoshop to throw away pixels instead of adding them. Which pixels should it throw away? Photoshop is guessing here as well. So whenever you resample an image in Photoshop, the result is always a softer image. You should sharpen the image afterwards with the Unsharp Mask filter to bring back the original clarity of the image.



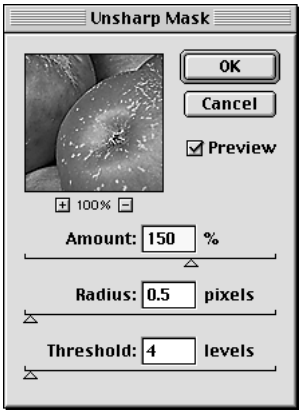
4. Change the width and height to the desired dimensions in pixels

3. If you are working with the absolute pixel dimensions above, the resolution does not matter.

2. Make sure this is turned on.

JPEG Tips

Remember that JPEG is a lossy-compression file format. This means that you will be throwing away information that you can't get back once you have saved a file as a JPEG. Here are a few things to know about saving a JPEG:

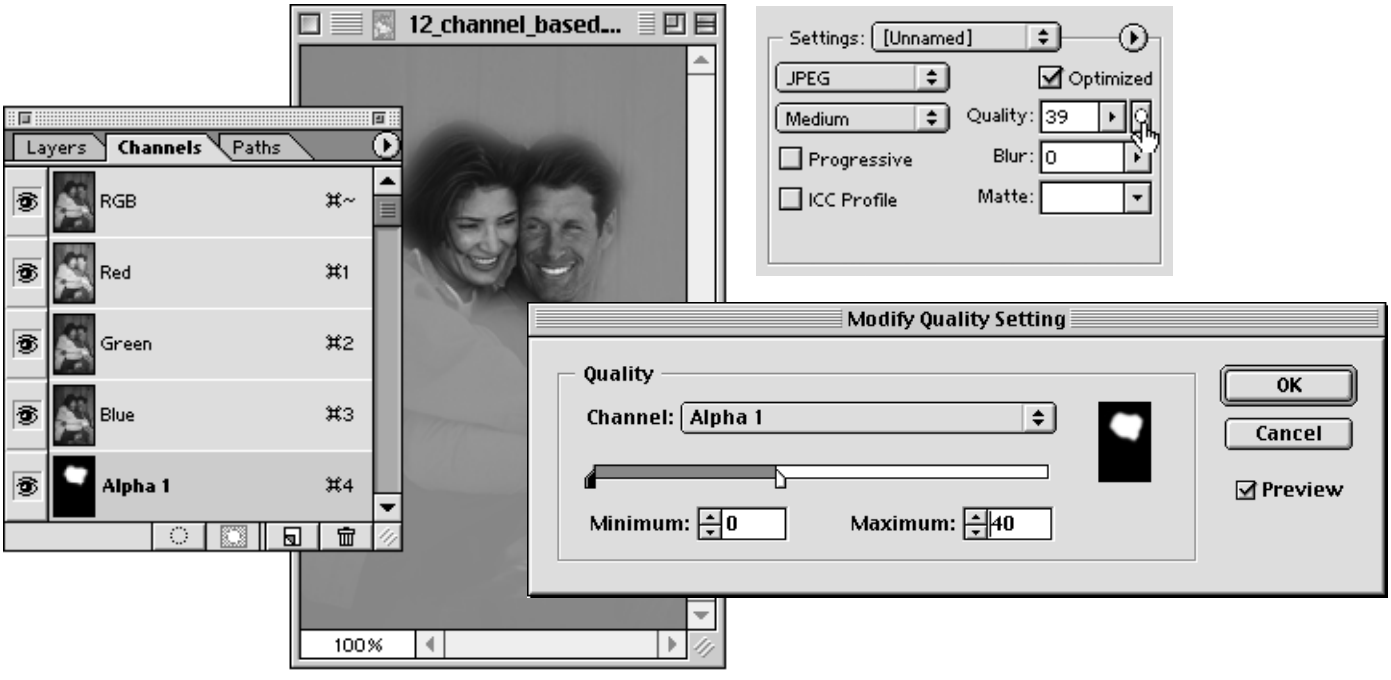


1. **Sharpen the image…** If you want your photographs to look their best, you should sharpen them using the Unsharp Mask filter after you have resized the image to its final dimensions. Here are some good starting point values for the using the Unsharp Mask filter on images for the web — Amount: 150%, Radius: .5, Threshold: 4.

   But maybe not… Sharpening an image after it has been resampled makes it look better, but it comes at cost. The JPEG compression engine likes soft, continuous tone images. It chokes on high contrast areas. Because sharpening increases the contrast of edges in the image, a sharpened image will have a larger file size than a non-sharpened image when saved as a JPEG.

2. **Turn off those previews…** Your Web graphics don't need them. Choose File > Preferences > Saving Files. Change the Image Previews setting to "Ask When Saving". Then, in the Save dialog box, uncheck all the Image Previews. This alone can shave your file size down by up to 50%! While your at it, change the Append File Extension to Always and turn on the Use Lower Case checkbox.

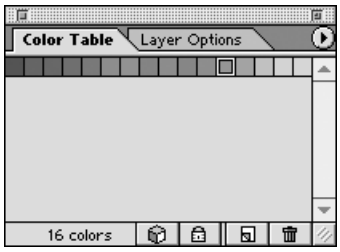
3. **Weighted Compression…** Photoshop 6 now allows you to use an alpha channel to mask out certain important areas for selective compression. The idea being that if there is an area of detail in an image that is more important than the non-important background, you can mask out those areas, and then control the amount of compression in the masked and unmasked areas independently.



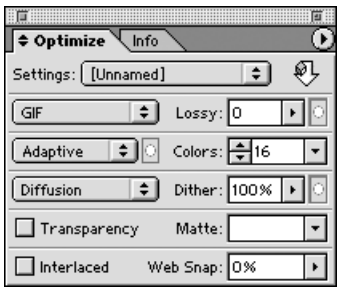
GIF Tips

1. **Use Web safe colors…** If you are creating artwork (not photographic) from scratch, only use colors from the web-safe color palette. If you are converting existing artwork, replace non-web safe colors with colors from the web-safe color palette.

2. **To verify if your image is using web-safe colors…** Change your monitor setting to display 8-bit (256 colors), or use the Browser Dither preview feature found in the Photoshop Save for the Web dialog box, or choose View > Browser Dither in ImageReady (Cmd + Shift + Y) [Ctrl + Shift + Y]. Any areas in the image that are dithering are not using web-safe colors.



Click this button to force a selected color to shift to web safe.

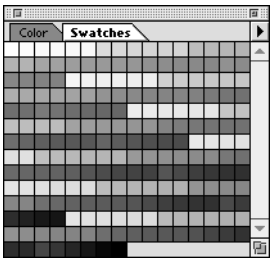


Change this value to 100% to force all colors of an image to shift to web safe.

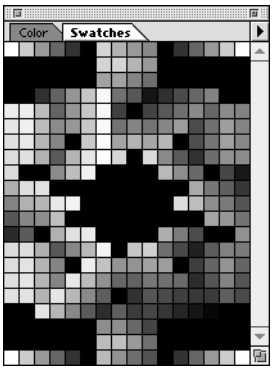
3. **Forcing web-safe colors…** If you use the Eyedropper tool and click on a color in the image, the corresponding color swatch will become selected in the Color Table. If you click on the color-safe cube icon, the color will shift to the closest web safe color automatically. Alternatively, you can force all of the colors in the image to shift to web safe colors by adjusting the Web Snap value in the Optimize palette to 100%.

4. **Controlling the palette…** If you want to influence which colors have more attention paid to them in an image when indexing it to an adaptive palette, select those colors in the Color Table and lock them by clicking on the Lock button. You can Shift + click to select multiple colors, and (Cmd + click) [Ctrl + click] to select mulitple discontinuous colors.

5. **A better Web-safe colors palette…** Since Photoshop 5.5, the web safe color palette is included as an option for the Swatches palette. However, the colors aren't arranged in as much of a visually useful manner as they could be. Luckily, the folks at Visibone have made a wonderful version of the Web safe colors palette that you can download for free and use in your favorite application that accepts CLUT files (ie. Photoshop). Visit them at www.visibone.com to download this special version.



Default web safe swatches

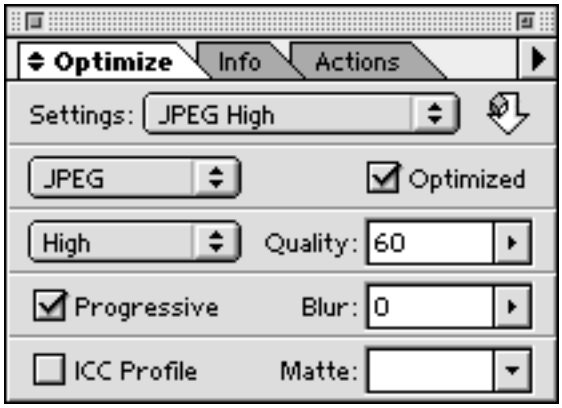


The visibone palette arranged in a familar color wheel.

Droplets, Part 1

Automate Optimizations

A feature that is often overlooked or never even discovered in ImageReady is its ability to batch process the optimization of multiple files. Not only is this a wonderful time saver, it is incredibly easy to set up. Simply open an image that you want to optimize and open the Optimize palette (F10) [F10] if it is not already open. Choose the optimization settings like you normally would. When you are happy with the settings, click on the large down arrow icon in the upper right corner of the palette. This will open a dialog giving you the opportunity to name the Droplet and choose a location for it to be saved.



Save the Droplet to the desktop and drag the file(s) you want optimized onto it.

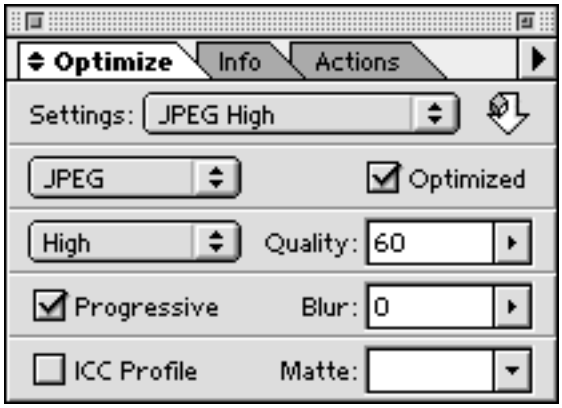
It is pretty handy to just save the Droplet to your desktop. The next time you need to optimize an image, or even a whole folder of images, and you want to use the same settings, simply drag your image or images onto the Droplet icon and go grab yourself a cup of coffee.

Notes: When you drag an of image(s) onto the Droplet, ImageReady will use the original file names when saving the optimized versions but will add (or change) the appropriate file extension to the end of the file name (.jpg, .gif, .png). The optimized versions get saved to the same location as the original files. If ImageReady is not already open, as you might expect, dropping a file onto a Droplet will launch ImageReady and keep it open after the optimization is finished.

Droplets, Part 2

Drag & Droplets

Optimization Drag and Droplet — In the n-Up views, if you dial in some optimization settings while in one pane, you can drag the current Droplet icon (located in the upper right of the Optimize palette) for the active pane to another pane to copy the settings. This simplifies side-by-side comparisons of the files. Set one, drag and drop the droplet to the other, then modify one to compare. For example, maybe you want to see the difference between JPEG Low versus JPEG Medium. Rather than having to change all the settings in the Optimization palette to match, drag the Droplet to a different pane and just change the one setting you want to compare.



Notes: If you are in the 2-Up view, the left pane is always set to Original by default. Once you manually change the "Original" pane, the drag and droplet trick will work as described. Also, this feature is not available in Photoshop's Save for the Web dialog.